

# Helpful Hints for Auto Workers

## *Tool Box under Hood or Hinged to Dash— Iron Pistons Easily Tested with Magnet*

POPULAR SCIENCE MONTHLY awards each month a prize of \$10, in addition to regular space rates, for the best idea sent in for motorists. This month's prize goes to Kenneth B. Murray, Sturgis, Mich. (Fig. 4). Contributions are requested from auto mechanics.

**M**ANY different types of special auto tool boxes have been described in POPULAR SCIENCE MONTHLY. Here are two more. In Fig. 1 is shown a tool box to be fitted under the hood. Modern cars with powerful and compact engines under high hoods make such a tool box possible. In many cars, a still larger tool box would be possible. It should be firmly bolted to the dash and braced with a piece of strap iron clamped to the horizontal rod that keeps the top of the radiator in position.

The tool box shown in Fig. 5 also can be fitted to nearly any car. Because the space arrangement under the cowl makes a shallow tray more practical, a swinging tray of this type will prove useful only for the smaller tools that are most used. The back edge of the tray is hinged to the dash and the latch on the front edge engages with the bead on the lower edge of the instrument panel or a piece of metal bent at right angles.

### MAGNET TESTS BEARINGS

IF YOUR motor is fitted with iron pistons, it is possible to test for loose wrist pin or connecting rod bearings by the use of an electromagnet such as is shown in Fig. 2. Of course, it will not work on aluminum alloy pistons. Secure a three-eighth or one-half-inch bolt from fourteen to sixteen inches long. Bend it into a U shape, being sure to have the

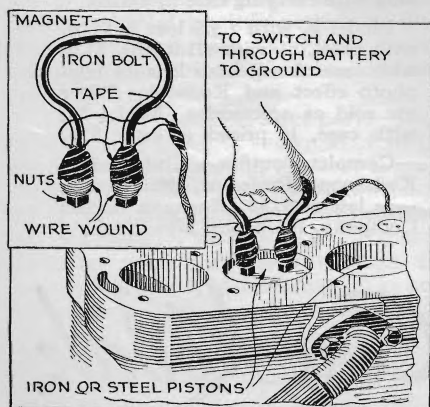


Fig. 2. An iron bolt is bent into horseshoe and wound to form a magnet to test iron pistons.

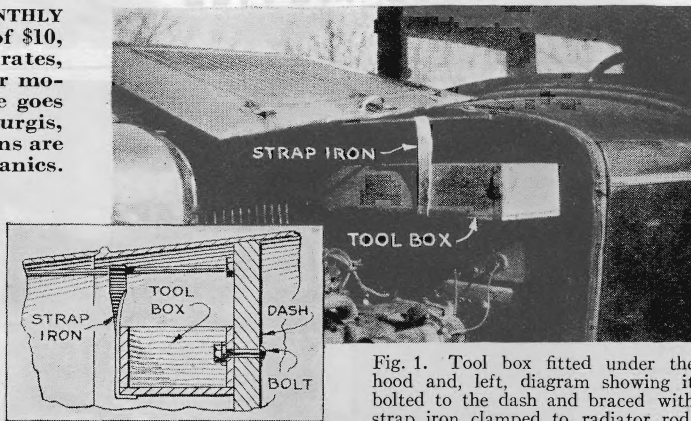


Fig. 1. Tool box fitted under the hood and, left, diagram showing it bolted to the dash and braced with strap iron clamped to radiator rod.

ends considerably nearer together than the diameter of the cylinder. Place a nut on the threaded end of the bolt and rivet it in place. Now wind the two coils around the ends of the bolt. Use any size wire from twenty-two to twenty-eight and put on as many coils as you can and still keep the outside measurement within the limit of the cylinder

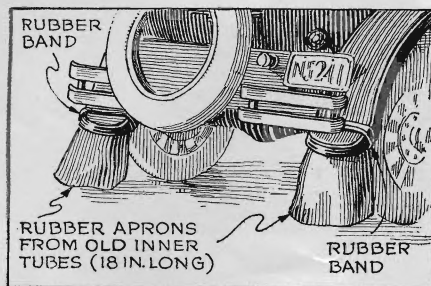


Fig. 3. Fender aprons to keep off mud and tar can be made from old automobile inner tubes.

diameter. Wind the wire in one direction on one end of the bolt and in the opposite direction on the other end, so as to produce north and south poles.

### FENDER APRONS

A DISCARDED inner tube supplies all the material needed for fender aprons (Fig. 3) that will prove especially useful to prevent mud, tar, or slush from splashing all over the body. Cut a pair of heavy rubber bands from the tube, then split a portion of the tube lengthwise and cut the two aprons. The upper edge of the aprons should be sewed with pieces of wire to the rubber bands so that they will be held in place when the bands

are snapped over the lower ends of the fenders.

### SPEED EASY TO READ

THE miles-per-hour figures on the speedometer can be read much more easily if a special lens is used as shown in Fig. 4. Remove the small bull's-eye lens from the pocket type of flashlight. One side of this type of lens is flat and the other convex. One drop of Canada balsam cement should be placed on the flat side of the lens and spread evenly over the surface. Then the lens should be pressed to the cover glass of the speed-

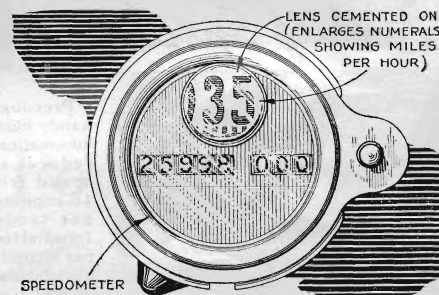


Fig. 4. A bull's-eye lens from a flashlight, fitted over speedometer, magnifies numbers.

ometer and held in place till the cement dries. Canada balsam cement is used by lens makers to cement together the sections of lenses and can be obtained from any dealer in optical goods.

Drivers who are annoyed by comments from passengers on the back seat whenever the speedometer registers beyond a certain figure will find that this extra lens cures the trouble by cutting off the view of the speed figures to everyone except the driver.

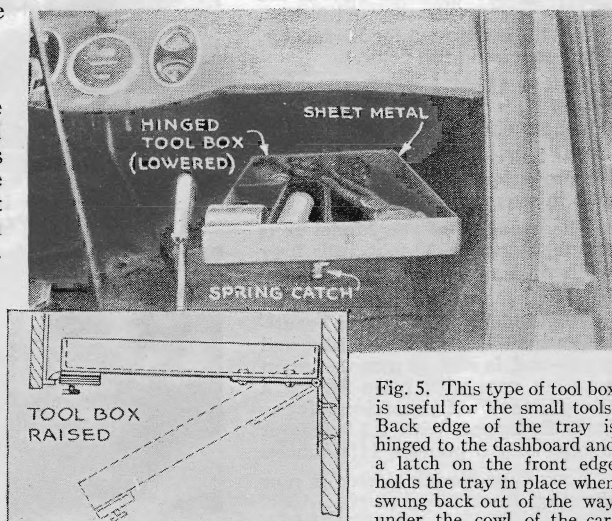


Fig. 5. This type of tool box is useful for the small tools. Back edge of the tray is hinged to the dashboard and a latch on the front edge holds the tray in place when swung back out of the way under the cowl of the car.